

HELMINTHOGLYPTA ARROSA MAILLIARDI PILSBRY
IN OREGON AND CALIFORNIA

BY A. G. SMITH AND E. P. AND E. M. CHACE

On a recent hike in Douglas Co., Oregon, from Looking-glass, seven miles south of Roseburg, to "Devil's Rock", a single dead shell of *H. arrosa mailliardi* Pils. was found by two of the authors. Close search in the locality the next day yielded a dozen more fairly fresh specimens, adult or nearly so, and in addition, seven or eight living juvenile specimens. One very "dead" shell found was larger than the others.

This discovery is of special interest, for so far as can be determined, it is the only recent record of the genus *Helminthoglypta* in Oregon.

In the past, several species of this genus have been mentioned as having been collected in the Pacific Northwest. These are:

Helix anachoreta W. G. B.? Cooper, Am. Jour. Conch., iv, pp. 222, 230, 1868; "Klamath Co., Oregon".

Helix arrosa Gould. Binney & Bland, L. and F. W. Shells of N. A., Pt. I, p. 164, 1869; a single specimen cited from "Columbia River".

Helix dupetithouarsi Desh. (part). Binney & Bland, L. and F. W. Shells of N. A., Pt. I, p. 174, 1869; seven specimens from "Klamath Lake, Oregon" and one from "Puget Sound,=*oregonensis* Lea". *H. oregonensis* Lea is placed in synonymy.

Helix ayersiana Newc. Proc. Calif. Acad. Nat. Sci., 1861, p. 103. Cited originally from Nootka Sound, Oregon.

Helix tudiculata W. G. B. Binney & Bland, L. and F. W. Shells of N. A., Pt. I, p. 166, 1869; cited as ranging from "San Diego, to Washington Territory". Cooper, Pac. R. R. Survey, No. 6, p. 377, 1860; "hab.—Washington Territory; Dr. Cooper".

As pointed out by Henderson,¹ these records are incorrect. They were undoubtedly based either on misidentification or on an unfortunate misplacing of locality labels.

J. G. Cooper,² in discussing *Helix nickliniana* Lea in 1868

¹ Henderson. Non-Marine Mollusca of Oregon and Washington, Univ. Colo. Studies, vol. XVII, no. 2, p. 74, 1929.

² Cooper. Am. Journ. Conch., vol. 4, pt. 4, p. 222, 1868.

says: "Dr. Newcomb's var. *c.* 'without band' from Klamath Co., has the umbilicus closed, not malleated, lip broad, and seems distinct, perhaps a form of *anachoreta* W. G. B." What Newcomb's shell was must remain a matter of conjecture, at least until other material is collected. Obviously it was not *nickliniana*, although possibly it belonged to the *arrosa* group. However, the locality, Klamath Co., Oregon, lies almost entirely east of the Cascade Mts., far removed from the wooded coastal region where *arrosa* is normally to be found. Newcomb's shell certainly was not *anachoreta*, which is a middle Californian species, or variety of *nickliniana*.³

Helminthoglypta arrosa (Gould) is found all along the northern California coast from Santa Cruz Co. northward. It may cross over into Oregon, but no authentic specimens of the typical form have been reported from this State. The "Columbia River" locality is an error.

The *H. dupetithouarsi* (Desh.) from "Puget Sound" is either a locality error or is based on *Monadenia fidelis* (Gray). The shells from "Klamath Lake", however, may now be said with a reasonable degree of certainty to be a small form of *M. fidelis*. Whether this is the variety *oregonensis* (Lea) cannot be stated definitely at present, but with a large series of this form that has recently become available, no doubt this point can be soon settled with finality. A somewhat similar form has also been collected recently in the canyon of the Shasta River in Siskiyou Co., California.

The Oregon record of *Helix ayersiana* Newc. has already been corrected in later literature.⁴ Its type locality is San Miguel Island, California. *Helix tudiculata* W. G. B. has not been reported from north of upper Tehama Co., California (Paynes Creek), where it has been found by one of the authors. The Oregon and Washington localities are erroneous.

³ Pilsbry. P. A. N. S. Phila., vol. 78, p. 478, pl. 36, figs. 8-11, 1926 [1927].

⁴ Pilsbry. Naut., XL, p. 78, 1927.

To this time, *Helminthoglypta arrosa mailliardi* Pils. has been collected from four localities that probably define the major portion of its range. It differs from all other varieties of *arrosa* in its small size, high spire, relative smoothness, and in the excessive thinness of the shell. The type lot is from Requa, Del Norte Co., California, near the mouth of the Klamath River, collected by J. W. Mailliard and Chase Littlejohn in 1921. In this lot is an unusually large shell, which has been noted especially by Pilsbry and figured by him.⁵ Another lot, collected by two of the authors and F. E. Richard, comes from the south side of the Klamath River at its mouth. The second locality is the ocean bluff near Crescent City, California, from whence comes a lot collected by E. P. and E. M. Chace, and which is about fifteen miles north of the type locality. The third locality, near Lookingglass, Oregon, is about 180 miles to the north of the type locality. The remaining lot is from the beach near Orick, Humboldt Co., California, which is about 20 miles to the south of it. It was collected by Dr. E. C. Van Dyke, July 15, 1931, and consists of 18 adult shells and 10 others not fully mature.

Thus, the known range can be said to extend for about 200 miles on or fairly close to the coast of northern California and southern Oregon, being found farther inland as the more northerly limit of its range is reached.

The type of *H. arrosa mailliardi* Pils. measures: maj. diam. 20.0 mm.; height 15.3 mm. It is slightly larger than average, has 5½ whorls, and is Holotype No. 2646 in the collection of the California Academy of Sciences at San Francisco. Average measurements and ranges in size of the three principal lots afford an interesting comparison and are given in the following table:

	Orick	Requa	Lookingglass
Average shell:			
Maj. diam.	18.9 mm.	19.9 mm.	18.0 mm.
Alt.	14.9 mm.	16.0 mm.	13.2 mm.
Largest shell:			
Maj. diam.	20.8 mm.	21.5 mm.	22.4 mm.
Alt.	16.7 mm.	18.2 mm.	16.9 mm.

⁵ Pilsbry. P. A. N. S., vol. 78, p. 483, pl. 38, fig. 15, 1926 [1927].

Smallest shell:

Maj. diam.	17.5 mm.	17.5 mm.	15.5 mm.
Alt.	12.9 mm.	13.3 mm.	11.5 mm.
Number measured	18	8	16

This variety is the smallest of the *arrosa* group and is unusual for the relatively little variation in size among the specimens so far studied. This is all the more remarkable because of the frequent wide range in size of the "typical" form of *arrosa*, not only among specimens from different localities, but also among specimens in the same lot. The largest *arrosa* so far seen has a major diameter of 40.5 mm., which places it among the biggest of our Pacific Coast land snails. Only a few of the largest of *M. fidelis* (Gray) exceed it in size, and then only by a small margin. The smallest is the Lookingglass specimen indicated in the table (15.5 mm.).

The affinities of *mailliardi* are with *H. a. expansilabris*, which it resembles in general contour only. While it is not at all impossible that intergrades between the two varieties may be found eventually, there are good reasons at present for considering the two as distinct, at least until a thorough study can be made of the entire *arrosa* group based on a large collection of specimens taken throughout its entire range.

DESCRIPTIONS OF SOME LAND SNAILS OF SOUTHWESTERN NORTH CAROLINA

BY WILLIAM J. CLENCH AND GILBERT S. BANKS

The following notes and descriptions of new forms are based upon material obtained during two trips into the mountains of western North Carolina.

The junior author made a trip during August, 1930, in Cherokee, Jackson and Swain counties, North Carolina. In July, 1931, the senior author accompanied by A. F. Archer and Harold Rehder investigated the counties of Cherokee, Clay, Graham, Macon, and Swain. The second trip was made